Future directions for Crop Genetic Resources

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Headlines in the press over the last year in LAC !

Sin arroz para todos !

Crisis mundial de los alimentos llega a EE.-UU.

Precios de maíz y trigo, por las nubes

Con hambre y papa cara

'devoran' la canasta familiar

Los precios de los alimentos engordan la inflación

Papa y arroz `

ANDI preve escasez de maíz

Indomables, los precios de los alimentos

Los precios de los alimentos seguirán al alza

Alerta roja por escasez de alimentos

Protestas por el hambre en Haiti

Workshop: "Shaping the Future of Genetic Resources in the CGIAR"

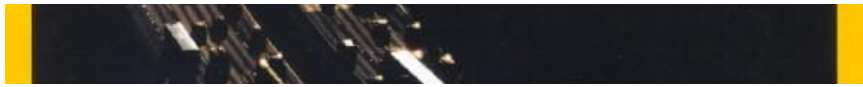
Over the last year :

oil went up to US$100 even to 135, but was at all times above 40 US$/ barrel

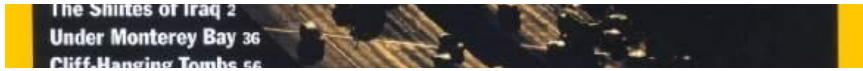
permanently, 5 times more when the Green Revolution was developed !

the human population grew up by another 60 millions people

the tax payers may have a legitimate expectation: do something about !



increase food availability and quality, at lower environmental costs !



more conservation and study of GR, more breeding of domestic species

The first Treaty of the third millenium :

but also the first treaty where the CGIAR is ever mentioned (Art. 15)

for what ?

for its role in conservation and in adding value to GR

and this is a law, approved by 114 countries to date .

the list of Annex 1 ?

it has but to increase

why not *Oxyrhynchus*, or *Rhizobium etli* on the list ?

The Habsburg Emperor Rudolf II as Vertumnus, by Giuseppe Arcimboldo, 1591. Skokloster Castle, Sweden

A GLOBAL TREATY FOR FOOD SECURITY AND SUSTAINABLE AGRICULTURE

THE INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

but in relation to the Treaty and its obligations for the CGIAR

two concerns (and hence possible future directions):

1) not completing a task, with irreversible effects

   i. Home work

   ii. Saving diversity from extinction

The Habsburg Emperor Rudolf II as Vertumnus, by Giuseppe Arcimboldo, 1591. Skokloster Castle, Sweden

2) not producing the IPGs expected by 2015 or before

   iii. Evaluation of diversity for new demands

   v. Conservation: the science of scarcity, the needed efficiencies

   vi. Promotion: realizing soon the rich of the conservation effort

what cannot be recovered with the passing of time . . .

1. Home work

- safety backups, namely towards Svalbard

  (in terms of coverage by the media, 2nd only to the Borlaug's Nobel Prize !)

- recovering 'institutional memory', namely towards past evaluations

- anticipate retirement of Staff, and train new people

  by the way, this is also affecting our partners in NARS of LAC ! **TRAINING**

what cannot be recovered with the passing of time . . .

2. Collection work

- landraces: too late !?
- wild relatives, of 1^{ary} and 2^{ary} gene pools
  (grasses far ahead of legumes; yet *Zea nicaraguense* 2000, *Oryza* in the Americas !)
- gap analysis, using GIS and other informations (not only geographic)
  collections continuously enriched, not "heritage of the past"
- 'new' selection pressures: search for germplasm in response to:
  drought, heat, salinity, water logging
  but also in context of climate change: resistances to diseases and pests

delivering the appropriate germplasm in 2015 . . .

3. Evaluation work

- landraces: a decade lost ?, and thus work to be resumed ?
- wild relatives: limited evaluation because of lack of protocols ?

two new challenges: environment 'footprint', and energy efficiency

- 'new' selection pressures: drought, heat, salinity, water logging
- new traits: nutritional aspects (higher content in minerals, vitamins), less energy for food cooking, for food transporation

meeting expectations from human societies now . . .

4. Pre-breeding work

should we do this ? or

should we continue to focus on IPGs conservation/ distribution only ?

- carry out breeding outside current breeders' interests

  (e.g. new/ different species, traits currently not bred for)

- "preventive" pest breeding

  (e.g. parallel with swine/ bird flu)

meeting expectations from human societies now . . .

5. Own research work : improve efficiency

- improve seed conservation technologies

  (e.g. ultradrying ?!, viability testing)

- improve the service to users : DNA banking

  (e.g. no need to distribute germplasm if it is to access DNA)

- continue GPG2 effort in conservation economics

  (innovations in conservation research need economic assessment)

meeting expectations from human societies now . . .

6. Promotion work

two ideals (GP Nabhan, 2009): food democracy, farmers' rights

- improve the link with extension services, conservation NGOs

  (e.g. education of extensionists, re-think SINGER differently ?!)

- complement Trust-supported efforts by NARS to increase the offer

- improve the link with the GCPs, and other genomic initiatives

A timetable of deliverables (examples) :

- **by 2010 to finish with establishing needs in Human Resources development**
- **by 2010 to set the plans, partnerships and protocols for further germplasm evaluations**
- **by 2010 to set the priorities and partnerships for research in conservation efficiency**
- **by 2011 to complete the plans for collecting in line with the Crop Strategies**
- **by 2011 to finalize the promotion strategy with conservation NGOs**
- **by 2013 to complete the safety backups to the Svalbard Vault**
- **by 2015 to diffuse the results of germplasm evaluations for selected traits**
- **by 2015 to diffuse the results of research on conservation efficiencies**

Thank you !